REMARKS

Claims 1-13 are pending in this application.

Applicant appreciates the Examiner's Clarification fax (dated June 13, 2003) of the Office Action with respect to the drawing objections. They were very helpful to the Applicant. In the Amendment, FIG. 6 is being resubmitted for approval. Minor changes have been made to FIG. 6 and in particular, the word "microcontroller" has been replaced with "microprocessor". No new matter has been added.

In the Office Action, the Examiner stated that no foreign documents cited in an IDS were found. In response, Applicant is resubmitting the foreign references with English abstracts. Applicant respectfully requests the Examiner to consider them and make them of record by initialing next to each reference listed in the previously submitted PTO-1449 form.

The Examiner requested a clean copy of amended claim 6. Applicant is submitting claim 6 in clean form.

The Examiner objected to numerous errors throughout the claims. Applicant appreciates the Examiner's effort and apologizes for those errors. All errors have been corrected in this Amendment. These changes are not done to narrow the scope of claims in any way.

The Examiner rejected claims 1-10 under 35 U.S.C. Section 102 under one of the following references: Ortyn (US 5557097), Trussell (US 4539655) and Rasmussen (US 5884072). Although changes were made to various claims, Applicant respectfully traverses the rejections to the extent that the rejections apply to the amended claims.

The present invention is directed to a control system including a central control station (typically a computer) that controls various control units that are used to adjust various adjustable elements in an optical instrument such as a scanning microscope. Some of the adjustable elements include objective turrets, X, Y, Z scanners, field diaphragm, etc. that are used to measure or observe specimens. Adjustments are typically made by the central computer sending an instruction, for example, to move a Z-stage by a certain distance, to a control unit for that Z-stage. After the instruction is sent, the control unit in the Z-stage is continuously queried by the central computer, for example, in the form of polling until an indication of completion is sent by the control unit. The problem is that the constant polling

to assess the status of the Z-stage is processing intensive. This is especially problematic when the central computer is simultaneously performing other processor intensive operations.

This problem is solved according to the present invention by turning a "dumb" control unit into a control unit with "master capability" during the controlling of the optical instrument. In other words, the **central computer is still capable of assessing the control unit status**, but that **work is offloaded to the control unit** with the master capability in order to free up the processing load in the central control stations.

In contrast to the prior art, not only is a central computer station provided with the capability of acquiring data about the status of the system that can be conveyed to it by the control units, but the capability for acquiring the status data is transferred partly or in a limited manner with respect to time from a control station (control station with master capability) to selected control units.

In other words, a substantial characteristic feature of the present invention is the introduction of control units with master capability, as they are referred to in the description. "Master capability" describes the capability of independently generating messages and sending them to the control station via the communication path that is provided. These selected control units are outfitted, for example, with microprocessors and are therefore referred to in the description and in Fig. 6 as "microprocessor units". Unlike a control unit with master capability, the control units referred to in Fig. 1 to Fig. 3 as "control unit slaves" do not have master capability and the master capability cannot be transferred to these control units even temporarily.

Consequently, a substantial characteristic feature of the present invention is that the capability of selected control units can be changed to offload the work that was previously done by the central station.

This unique feature is recited in claim 1 as "detecting the status data of at least one of the control units using said at least one microprocessor unit with master capability **so as to offload the work of detecting the status data** of the at least one control unit **from the control station**" Anticipation of claim 1 requires at least the following two features: 1) the central station has the capability to assess the status of a control unit and 2) the capability to assess the status control is also at the microprocessor unit so as to offload the work that was previously done by the central station.

This offloading concept is not described in Ortyn at all and neither is the person skilled in the art of control and development engineering for optical measuring devices and observation instruments pointed toward this procedure by Ortyn. Ortyn is related to functions and processes in automatic focusing in connection with microscopic recording of a specimen. The device described essentially comprises a "central processor", a "motion controller" and a "motor driver" and describes the interaction of these units. In order to achieve correct focusing with this arrangement, image data are recorded from various focus positions and evaluated and, as a result of the evaluation, new presets are obtained for the adjustment of the focus distance until the optimal focus position is reached. Each of the function units (central processor, motion controller, motor driver) retains its functions or capabilities throughout the automatic focusing process.

In Trussel, communication is carried out by way of three (A, B, C) independent bus systems, wherein the information is conveyed from node to node. These nodes support a modular concept and have set assigned tasks and capabilities which remain unchanged throughout the process. However, Trussel does not provide for changing the capabilities of individual nodes to offload the work that has been done by the control station within the meaning of the present invention, nor is this necessary.

In Rasmussen, a slave controller independently sends data to a master controller (see claim 1). In the present invention, on the other hand, master controllers are introduced on the level of the "slaves" at least temporarily and are capable of taking over control functions for this period of time for their own communication with the control station (control station with master capability) and also providing for the communication between the control units with permanent slave character and the control station. None of the three references cited herein anticipates the inventive idea of the present invention.

Applicant has added new claims 11-13. Claim 11 recites another novel feature that the control unit with the master capability can not only assess the status of itself, but it can also assess the status of "other control units so as to offload the work" that was previously done by the central control station. None of the cited references teach or suggest such a novel feature. Claims 12-13 are also patentable by virtue of their dependency from independent claim 11.

Based upon the above amendments and remarks, Applicant respectfully requests reconsideration of this application and its earlier allowance. Should the Examiner feel that a telephone conference with Applicant's attorney would expedite the prosecution of this application, the Examiner is urged to contact him at the number indicated below.

Respectfully submitted,

Harry K. Ahn
Reg. Number: 40,243
Telephone: 212-521-5400
Facsimile: 212-521-5450

Reed Smith LLP
599 Lexington Avenue
29th Floor
New York, NY 10022-7650

GHK/HKA